

## RICIN VACCINE AND METHODS OF MAKING AND USING THEREOF

### ABSTRACT

Disclosed herein are polypeptides and variants thereof comprising a polypeptide sequence having substantial identity to ricin A chain (RTA) that lack detectable N-glycosidase-rRNA activity or exhibit reduced N-glycosidase-rRNA activity as compared to controls and methods of making and using thereof. The polypeptides and variants have a greater solubility in aqueous solutions of physiological pH and ionic strength than RTA and also retain the integrity of the neutralizing immunological epitope of wild type RTA. Also disclosed are immunogenic compositions that may be used to immunize a subject against ricin intoxication. Methods of immunizing against, treating, and preventing ricin intoxication are disclosed.